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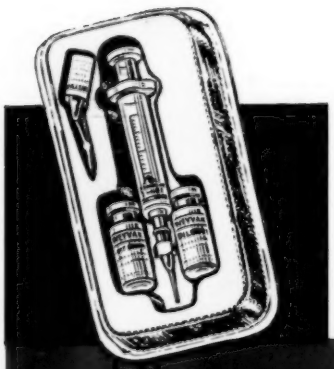

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Observations on the Fertility of Newly Established Herds

BY

GARETH WILLIAMS

Milk Marketing Board, Cattle Breeding Centre,
Welshpool

SUMMARY.—Observations on the fertility of 125 herds in the first year after being established show that the 90- to 120-day non-return percentage rate for the 921 cows and heifers in these herds was 60.8 per cent compared with 73.7 per cent. for 5,310 cows and heifers in the other 664 herds in the same A.I. Sub-Centre area.

A series of similar observations in other parts of the country also show a lowered fertility in newly established herds. In progeny testing stations the fertility of the heifers under test is much lower than would be expected for their herd mates at their home farms.

Factors associated with the change in environment are suggested as being responsible for at least some of the lowered fertility observed in newly established herds and also at progeny testing stations.

Introduction

DURING the course of commercial A.I. operations the impression had been gained that herds, newly established by the purchase of individual animals from different sources had, during their first year, a lower fertility than other herds in the same area. On investigation it was seldom that a definite diagnosis could be made as to the cause of the infertility. It was generally noted, however, that the fertility level gradually improved of its own accord.

The observations recorded in this paper were on:—

(a) Herds in Caernarvonshire established following foot-and-mouth disease.

(b) Other new herds established in different parts of the country.

(c) Progeny testing station fertility records.

Materials

During the latter part of 1957, an outbreak of foot-and-mouth disease occurred in Caernarvonshire and the subsequent re-stocking of the affected farms provided an opportunity for the fertility level in a large number of newly established herds to be observed.

About 50 outbreaks of foot-and-mouth disease occurred and, as many of the small holdings involved had poor boundaries of stone walls and were in close proximity to sheep walks on the open mountain, "block" slaughtering was carried out to limit the spread of the disease. One hundred and twenty-five small herds owned by A.I. users in the Bangor Sub-Centre area were slaughtered and subsequently replaced. The animals were slaughtered during October and November, 1957, and re-stocking commenced a few weeks later.

The fertility level in these observations is estimated by the non-return rate. This is the percentage of animals that have not had a second insemination within 90 to 120 days of the first insemination and which are thus assumed as holding to the first insemination.

Results

Observations on the fertility of the newly established herds were carried out as from January, 1958, and these were compared with the fertility of all the other herds in the remainder of the Bangor Sub-Centre area which were unaffected by the outbreak (see Table I).

The Non-Return percentages show that the level of fertility in the new herds was consistently below the level in the other herds in the same area during the whole of 1958 and showed a drop of 12.9 per cent. over the year.

Breed Structure

As a change in the breed of cows kept might have had an effect on the fertility, the herds involved were then examined to find whether there had been any such change. Herds were classified according to the predominant breed of animal in them, *e.g.* "Predominantly Ayrshire Type" means that there were more Ayrshire-type animals in the herd than any other breed (see Table II).

This shows that the only marked changes were

TABLE I
RESULTS IN THE CAERNARVONSHIRE HERDS DURING 1958

	January to March, 1958		April to June, 1958		July to September, 1958		October to December, 1958		Total January to December, 1958	
	Number of first inseminations	Non-return percentage	Number of first inseminations	Non-return percentage	Number of first inseminations	Non-return percentage	Number of first inseminations	Non-return percentage	Number of first inseminations	Non-return percentage
125 newly established herds ...	364	61·2	251	55·7	141	69·5	165	60·0	921	60·8
664 other herds in the same area...	1,626	70·8	1,372	72·3	1,001	75·7	1,311	78·6	5,310	73·7

in the Friesian herds which increased from 20 to 30 and in the Shorthorns which decreased from 20 to 12.

To find out whether the drop in fertility was consistent amongst the various breeds (Table III) the non-return rates of animals in the "new" herds were worked out on a breed basis. This was compared with the non-return rate for the same number of animals of the respective breeds in established herds during the same period. These latter animals were found by going through the herd record cards in alphabetical order until the required total for each breed had been obtained.

TABLE II
BREED COMPOSITION OF THE AFFECTED HERDS

Breed	Number of herds before slaughtering	Number of herds after re-stocking
Predominantly Ayrshire type ...	39	38
,, Friesian ,, ...	20	30
,, Shorthorn ,, ...	20	12
,, Welsh Black type	46	42
,, Jersey type ...	0	3
	125	125

The drop in fertility is seen to affect all breeds except the Friesian cattle. The figures for the individual breeds are, however, rather too small to make significant comparison.

Other Areas

In the ordinary course of events farms change hands and herds are dispersed, and this means the establishment of new herds of cattle by the new tenants. In addition, the intensive tuberculosis eradication campaign has involved the selling of cattle and the starting of new herds. The opportunity has been taken to follow up the original Caernarvonshire observations with similar observations in other areas where farms have been cleared of cattle and new herds have been established with bought-in animals.

TABLE IV
RESULTS IN NEWLY-ESTABLISHED HERDS IN OTHER AREAS

Area	Number of new herds	Number holding to first insemination	Non-return percentage	Non-return percentage of A.I. unit	Difference in non-return rate
Caersws	19	215	66·0	72·0	–6·0
Dorset	17	225	63·1	68·2	–5·1

In the case of the Caersws figures they are the results obtained in the "new" herds during the first year after the herds were established whilst the Dorset figures are for the first 6 months after being established. In both cases the "new" herds failed to reach the fertility levels being generally obtained in the area during this period.

TABLE III
NON-RETURN RATES FOR THE DIFFERENT BREEDS

	Breed of cows and heifers	January to December, 1958			Difference in non-return rate
		Number of first inseminations	Number holding to first insemination	Non-return percentage	
New herds ...	Ayrshire	270	156	57·0	– 9·2
Other ,, ...	,,	270	179	66·2	
New herds ...	Friesian	320	221	69·0	+ 1·2
Other ,, ...	,,	320	217	67·8	
New herds ...	Shorthorn	96	56	58·3	–16·7
Other ,, ...	,,	96	72	75·0	
New herds ...	Welsh Black	194	125	64·4	– 5·1
Other ,, ...	,,	194	135	69·5	
New herds ...	Jersey	41	14	34·1	– 5·0
Other ,, ...	,,	41	16	39·1	

TABLE V
COMPARATIVE RESULTS AT THE FIVE MIDLAND CENTRES

Area	New herds				Contemporary herds				Difference in non-return percentage
	Number of herds	Number of first inseminations	Number holding to first insemination	Non-return percentage	Number of herds	Number of first inseminations	Number holding to first insemination	Non-return percentage	
Tean	15	397	255	64·3	15	366	257	70·2	— 5·9
Tarporley ...	20	641	358	55·8	20	776	503	64·8	— 9·0
Sutton Bonington	30	621	349	56·2	30	670	448	66·9	—10·7
Cheswardine ...	15	636	416	65·4	15	525	362	69·0	— 3·6
Buxton	20	382	266	69·6	20	526	390	74·1	— 4·5
Total	100	2,677	1,644	61·4	100	2,863	1,960	68·4	— 7·0

An investigation into results obtained at 5 A.I. Centres in the Midlands again show the same trend (Table V).

The results in the "new" herds are 7 per cent. below that in other herds in the same area for the same period.

Progeny Testing Stations

The animals collected together at progeny stations resemble the "new" herds in that a number of animals are brought together from a number of different farms. They differ, however, in that all the animals at the stations are heifers calving for the first time. They are usually moved from their home farms a few weeks before calving, they calve at the station and are then inseminated there. The level of management at those stations is, of course, comparable to that found in the best herds.

TABLE VI
NON-RETURN RATES FOR HEIFERS AT THE DARTINGTON HALL PROGENY TESTING STATION

Year	Number of daughter groups	Number of first inseminations	Number holding to first insemination	Non-return percentage
1954–5	2	40	19	47·5
1955–6	2	38	22	57·8
1956–7	2	39	21	53·8
1957–8	3	60	24	40·0

Reduced fertility has been observed in organised progeny testing stations in this country and at Selby B.O.C.M. (1959) have experienced the problem in their test groups over a number of years.

Figures recorded by Holt (1959) for animals undergoing test at Dartington Hall also show below-average insemination results.

The column "daughter group" in Table VI indicates the number of sires whose daughters were under test. The low fertility is seen amongst heifers of all the bulls whose progeny were under test.

The same problem has been noted at progeny stations in Denmark. Rottensten and Touchberry (1953) observed that the non-return rate at the progeny testing stations is considerably lower than that in ordinary herds. They quote 40.1, 38.3, 37.1, 30.2 per cent., at first, second, third, and fourth services respectively. The 1956 Report for the Danish State Research Laboratory in its section on bull progeny tests gives the number of inseminations per pregnancy, for the animals undergoing testing, as 2.1.

Discussion

When establishing "new" herds there is always the possibility of buying in some trouble including poor breeders. The true importance of such animals is impossible to assess in this survey. It is not, however, considered that this factor alone would be responsible for all the drop in fertility as the same phenomenon has been noted in progeny testing stations, in this country and in Denmark, where the cattle observed were all heifers. The major part of the drop in fertility is thought to be due to the fact that the animals have been removed from their own environment and it is likely that the end effect is due to a combination of several factors resulting from this movement. In being transported and put into a new herd composed entirely of "strange" animals the individual cow must experience a certain amount of stress and this could have a direct effect on its reproductive capabilities. Once it is introduced into its new surroundings the animal is exposed to a new bacterial flora. This flora would be particularly varied as, in new herds and in progeny stations, the animals come from almost as many herds as there are animals in the herd. Rottensten and Touchberry (1953) suggest this as a possible cause of the low fertility of cattle at the Danish progeny testing stations.

TABLE VII
RESULTS IN THE CAERNARVONSHIRE HERDS DURING 1957

	Results during January to December, 1957		
	Number of first insemina-tions	Number holding to first insemination	Non-return percent-age
125 herds before slaughter	619	441	71·2
625 other herds in the same area	4,010	2,886	71·9

The results quoted have been noted following the use of A.I. where one of the prerequisites of success

(*Continued at foot of page overleaf*)

The Use of Bephenium Chloride in the Treatment of *Ancylostoma caninum* Infections in Dogs when Other Anthelmintics are Contra-indicated

BY

P. SENEVIRATNA

Department of Veterinary Pathology, University of Ceylon, Peradeniya, Ceylon.

SUMMARY.—Bephenium chloride when given at the dosage rate of 20 *to* 50 *mg. per kg. bodyweight to* 20 *dogs with* Ancylostoma caninum *infection complicated with other diseases such as piroplasmosis* (Babesia gibsoni), *distemper, hepatitis or nephritis, appeared to be safe and effective. In every case the prognosis was improved as a result of the elimination of* A. caninum *infection.*

Introduction

RECENTLY Copp, Standen, Scarnell, Rawes and Burrows (1958) found that bephenium compounds appeared to be more effective against the mucosa developing nematodes, and demonstrated their activity against *Ancylostoma caninum* and other helminths. Rawes and Scarnell (1958) and Scarnell and Rawes (1959) found that bephenium embonate was effective against *Nematodirus* spp., while Rawes and Scarnell (1959) found that bephenium hydroxynapthoate was effective against *Nematodirus* spp. and other trichostrongyle nematodes in lambs. Burrows (1958a) found that bephenium chloride was effective against *A. caninum* and that a single dose of 20 mg. per kg. or higher gave nearly complete clearance. Later (Burrows, 1958b) he showed that various salts of bephenium given in single doses of over 20 mg. per kg. to naturally infected dogs and cats gave 99·4 per cent. clearance, and single doses of 20 mg. per kg. or less gave 94·1 per cent. clearance of *Ancylostoma caninum*.

Experiments conducted on human beings in Ceylon (Goodwin, Jayawardene & Standen, 1958) indicated

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Observations on the Fertility of Newly Established Herds.—*Concluded.*

is accurate observations of heat, and the carrying out of insemination at the optimum time. It is possible that at least some of the new owners would take time to get to know their animals and be able to assess their oestrous behaviour.

In the Caernarvonshire sample A.I. had been used on the 125 slaughtered herds prior to the outbreak of foot-and-mouth disease, and out of the 664 non-affected herds in 1958, 625 had used A.I. in 1957.

Whilst the fertility level in both groups was the same (71.2 and 71.9 per cent.) during 1957, the group of 125 herds dropped to 60.8 per cent. after re-stocking (see Table VII). But during the same period the unaffected herds remained at the satisfactory level of 74.7 per cent.

The lowered fertility on the re-stocked farms persisted during the whole of 1958 but during 1959 a slight improvement was recorded and this is shown in Table VIII.

Figures now becoming available suggest that the improvement is continuing. This rise in the fertility levels, seen during the second year after re-stocking, would be after most of the bought-in animals had been in their new surroundings for over 12 months and most of them would have calved once during this period.

Acknowledgment.—I would like to thank Dr. Joseph Edwards, D.SC., and Mr. G. F. Smith, M.R.C.V.S., for all their help with these observations. Also Mr. K. O'Sullivan, M.R.C.V.S., and Mr. J. P. Frappell, M.R.C.V.S., in making available results obtained in their region. Particular thanks are due to Mr. D. J. G. Richards and the Staff at the Llangefni A.I. Centre where most of the material was obtained.

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TABLE VIII
RESULTS IN THE CAERNARVONSHIRE HERDS DURING 1959

	January to March, 1959			April to June, 1959		
	Number of first inseminations	Number holding to first insemination	Non- return percentage	Number of first inseminations	Number holding to first insemination	Non-return percentage
New herds ...	230	158	68·6	238	168	70·5
Other ,, ...	1,632	1,191	72·9	1,408	1,050	74·5

that bephenium hydroxynapthoate was effective against *Necator americanus* the common hookworm in man in Ceylon, and had the added advantage that it could be given to patients with advanced anaemia and diarrhoea. It was, therefore, considered superior to tetrachlorethylene. Similar results were obtained by Young *et al.* (1958) in America using bephenium chloride.

In Ceylon and India *A. caninum* infection is extremely common, and quite often some dogs get a concurrent infection with *Babesia gibsoni*. Both these produce a marked anaemia and at times the condition of the animal becomes so bad as to warrant a blood transfusion as the only measure to save its life. This procedure cannot be adopted by many field veterinarians due to lack of facilities. A similar situation arises when an anaemic dog severely infected with hookworms gets distemper, nephritis, or hepatitis. However, by the use of bephenium chloride, and specific therapy against *Babesia gibsoni* or the other concurrent infections the writer has saved the lives of several dogs. Normally this would not have been possible, as the use of tetrachlorethylene or other anthelmintics effective against *A. caninum* would have aggravated the condition.

Material and Methods

In view of the foregoing it was decided to study the effect of bephenium chloride on dogs suffering from heavy infestation with *Ancylostoma caninum*, which could not have been treated with other anthelmintics. The results of 20 such cases treated in 1959 are reported in this paper. In each case, whenever possible, the number of eggs per gramme of faeces was determined immediately before treatment, and again 3 to 12 days after treatment, using Stoll's dilution technique. In some dogs, where this was not possible, the results were assessed by the presence or absence of eggs seen after flotation. In all cases, the intercurrent infections were treated simultaneously, though this is not mentioned in the Table. The drug was given orally in gelatine capsules, each holding 100 mg. No special precautions were taken ; the drug was given at any time during the day, as was found convenient, irrespective of existing complications.

Discussion and Results

All the patients, details of which are presented in the appended Table, had some disease other than ancylostomiasis, and were selected for treatment because they could not normally have been given any other anthelmintic. Of special interest is case No. 18 which had infectious hepatitis and heavy roundworm and hookworm infestations. This animal was given anti-hepatitis serum on 3.10.59 and on the same day bephenium chloride at the dosage rate of 50 mg. per kg. Yet it never showed any side effect due to the drug.

After 4 days it was negative for both roundworm and hookworm ova. The animal on this day showed *B. gibsoni* in the blood and at the time of writing has been treated and is looking well.

Case No. 19 is another outstandingly complicated case which could never have been given any other anthelmintic. Though it had to be given 2 blood transfusions, the course of the disease was altered for the better as it was possible to give simultaneous treatment for hookworm infestation.

Only 2 dogs showed slight nausea (cases No. 4 and 14) on administration of the drug. These dogs appeared to be clinically in much better condition than the others. The nausea may be attributed to the particular animal's temperament or to an idiosyncrasy.

All the animals improved, and 17 of the 20 dogs treated showed no eggs after a period of 3 to 7 days or more. One showed only a single infertile egg after 3 days. Only one dog (Case No. 16) showed a few eggs 8 days after treatment. (Case No. 9 died, but this animal had been ailing for a long time. Death was due to marked anaemia and the several simultaneous infections due to *Spirocerca lupi*, *Dirofilaria repens* and *Babesia gibsoni*, some of which were refractory to treatment. This animal died 7 days after bephenium chloride was given. On administration of the drug it did not show any ill effects.

The above results indicate that bephenium chloride is an anthelmintic that could be given to dogs suffering from severe ancylostomiasis and other complications. This is due to the fact that bephenium salts are very scarcely absorbed from the intestine (Rogers, 1958). For the same reason Goodwin *et al.* (1958) in their trials on hookworm infections in man, found that bephenium hydroxynapthoate could be given to patients with advanced anaemia, diarrhoea, hepatitis and cirrhosis.

Acknowledgment.—It is a pleasure to thank Professor C. A. McGaughey of the University of Ceylon for his constant encouragement and for placing at the writer's disposal a sample of bephenium chloride given to him by Messers Burroughs Wellcome & Co. ; Dr. A. Amarasinghe, Deputy Director of Animal Production and Health, Ceylon and Messrs R. Arasaratnam and S. G. de S. Wettimuny for providing facilities at the Government Veterinary Hospital, Peradeniya, to treat some of the dogs. Thanks are also due to Mr. N. Weerasinghe for making the faecal egg counts.

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The Table referred to in col. 1 on this page is so extensive that it has had to be printed overleaf. The inconvenience to author and readers is regretted.—EDITOR.

SUMMARY OF CASE HISTORIES OF DOGS TREATED WITH BEPHENIUM CHLORIDE

Number; date	Sex, breed and age	Weight; temperature	History and clinical signs	Diagnosis; number of hookworm eggs per gramme faeces	Dosage of bephenium chloride, mg. per kg.	Results; date	Other observations
1 / 17.7.59	Male, Alsatian, 4 years	84 lb. / 104° F.	Right femur pinned by intramedullary pin; blackish diarrhoea	Bacterial infection of operative wound and ancylostomiasis; 1,800 eggs per gramme of faeces on 17.7.59	20	Only 1 infertile egg on flotation on 21.7.59	No signs of toxicity; clinical condition improved; diarrhoea stopped
2 / 22.7.59	Male, Boxer, 2½ years	55 lb. / 103·4° F.	Arching back, loss of appetite; dog anaemic and has cough	Hepatitis, bronchopneumonia and ancylostomiasis; 1,400 eggs per gramme of faeces on 22.7.59	20	No eggs on flotation on 27.7.59	Marked clinical improvement and regain of appetite
3 / 23.7.59	Male, Alsatian, 2½ years	50 lb. / 102° F.	Dermatitis and emaciation	Allergy, chronic nephritis with ancylostomiasis. 440 eggs per gramme of faeces on 23.7.59	20	No eggs on flotation on 25.7.59	Improvement
4 / 23.7.59	Female, Boxer, 6 months	40 lb. / 103° F.	Pruritis and loss of appetite	Allergy and ancylostomiasis. 2,700 eggs per gramme	20	No eggs on 29.7.59	No appreciable clinical improvement; slight nausea
5 / 6.8.59	Female, Boxer, 2 years	55 lb. / 100° F.	Interdigital eczema, ringworm infection and loss of appetite	Ancylostomiasis, allergy, number of hookworm eggs too scanty to determine eggs per gramme	20	Negative on 17.8.59	Improvement
6 / 6.8.59	Male, Crossed Terrier, 6 years	25 lb. / 102·4° F.	Off feed for 3 days, arched back and anaemic	Nephritis and ancylostomiasis; heavy infection; number of eggs per gramme not determined	20	Negative on 10.8.59	Marked clinical improvement
7 / 6.8.59	Male, Alsatian, 2 years	36 lb. / 102·4° F.	Off feed for several days; dog very anaemic	Piroplasmosis due to *Babesia gibsoni* and ancylostomiasis. Infection heavy; number of eggs per gramme not determined	20	Negative on 16.8.59	Improvement
8 / 10.8.59	Female, Cross-bred, 1½ years	25 lb. / 103·4° F.	Animal treated for nephritis earlier; has cough, is off feed and anaemic	Pneumonia and ancylostomiasis; 220 eggs per gramme faeces	20	Negative on 14.8.59	Improvement
9 / 10.8.59	Female, Miniature Boxer, 4 years	32 lb. / 103·6° F.	The dog is off feed, very anaemic and emaciated. Treated by several veterinarians before, without success	The animal has Piroplasmosis due to *B. gibsoni*, *Spirocerca lupi* infection; filariasis; heavy infection; eggs per gramme not determined	20	No eggs seen on 17.8.59	Dog died on 17.8.59 No worms seen at autopsy

SUMMARY OF CASE HISTORIES OF DOGS TREATED WITH BEPHENIUM CHLORIDE—*continued*

Number; date	Sex, breed and age	Weight; temperature	History and clinical signs	Diagnosis; number of hookworm eggs per gramme faeces	Dosage of bephenium chloride, mg. per kg.	Results; date	Other observations
10 19.8.59	Male, Dachshund, 1½ years	30 lb. 103° F.	Animal anaemic, dull and depressed	Filariasis and ancylostomiasis. 420 eggs per gramme	20	Negative on 29.8.59	Improvement
11 28.8.59	Crossed female, Alsatian, 3 years	42 lb. 103·8° F.	Emaciated dog with nephritis; marked anaemia	Ancylostomiasis; infection heavy; number of eggs per gramme of faeces not determined	20	Few infertile eggs on 31.8.59	Improved. Later the dog contracted distemper and had to be destroyed
12 5.9.59	Male, Boxer, 4½ years	55 lb. 102·8° F.	Emaciated due to chronic nephritis, arching of back and loss of appetite, anaemia	Nephritis and ancylostomiasis, 110 eggs per gramme of faeces	20	Faeces could not be examined	Clinical improvement recorded
13 7.9.59	Male, Dachshund, 2 years	30 lb. 103·4° F.	Loss of appetite and vomition	Hepatitis and ancylostomiasis; heavy infection; number of eggs per gramme not determined	20	Negative on 19.9.59	Improvement
14 14.9.59	Female, Boxer, 6 months	45 lb. 103·8° F.	Pruritis, skin rash and loss of appetite	Allergic pruritis and ancylostomiasis; number of eggs per gramme not determined	20	Negative on 21.9.59	Nausea reported after administration of drug. Improvement reported later
15 18.9.59	Male, Alsatian, 6 years	62 lb. 103·8° F.	Skin rash and diarrhoea	Allergy and ancylostomiasis: 7,200 eggs per gramme	20	Negative on 25.9.59	Improvement of diarrhoea
16 18.9.59	Male, Alsatian, 2½ years	55 lb. 102·6° F.	Skin rash, diarrhoea and occasional vomition	Allergy, ancylostomiasis and hepatitis; 400 eggs per gramme	20	A very few eggs on flotation on 26.9.59	Improvement of general condition
17 18.9.59	Male, Labrador, 4 years	48 lb. 104·2° F.	Complete loss of appetite for seven days	*B. gibsoni* ++; Hb. 60 per cent. ancylostomiasis ++; eggs per gramme not determined	20	Negative for hookworms on 23.9.59	Dog improved but subsequently had to be given a blood transfusion as the response to therapy against *B. gibsoni* was not satisfactory
18 3.10.59	Crossbred, 2½ months	8 lb. 105° F.	Loss of appetite and anaemic; prognosis very grave	Infectious hepatitis; hookworm and roundworm infections very heavy; number of eggs per gramme not determined	50	Negative on 7.10.59 when the dog developed *B. gibsoni* infection	Dramatic improvement. Subsequently it was treated for *B. gibsoni* infection and it recovered
19 4.10.59	Male, Irish × English setter	40 lb. 104·2° F.	Complete loss of appetite for a week. Arching back; very anaemic. Prognosis extremely unfavourable	Hepatitis; *B. gibsoni* infection. Hb. 40 per cent.; hookworm infection mild	25	Negative on 10.10.59	The dog improved slowly. Two blood transfusions had to be given. The dog at the time of writing is fit
20 16.10.59	Male, Great Dane, pup	18 lb. 102·8° F.	Discharge from eyes and diarrhoea	Distemper and hookworm infection. 120 eggs per gramme	50	Negative on 21.10.59	The dog recovered completely

Caesarean and Intussusception Operation in the Mare

BY

R. S. COWIE

Keith

Subject

Welsh Mountain pony mare, 5 years old.

History

I was called to see a foaling mare which was having difficulty in delivery plus complication of what was stated to be prolapse of rectum.

Examination

This revealed that bowel complication was an intussusception of the small colon which was hanging down from anus for a length of 2 feet. Cause of dystocia was deformity of foal's head, which was extremely wide and flattened. It was obvious that bowel displacement could be corrected only by laparotomy, and it was decided that the birth of the foal would be accomplished most easily by caesarean operation. Powerful labour pains caused the intussusception to get worse.

Procedure

The intussuscepted bowel was pushed into the rectum to keep it warm and protect it from further damage, and the anus was sutured. Paravertebral anaesthesia and local infiltration of the operation site on the left flank was used. The pony was cast on its right side and the two fore legs and the right hind leg were tied together. The left hind leg was left free to allow a wider field of operation. An incision about 7 inches long was made downwards and forwards at an angle of 20° to the vertical from a point about 10 inches below the loins, and half-way between the last rib and the muscle groups of the hind leg. The uterus was located, and the foal's hind leg was grasped through the uterine wall and that part of the uterus was pulled out through the wound. An incision about 7 inches long was made in the uterine wall and the foal was delivered by traction on the hind legs. The uterine wound was closed with one row of continuous sutures using No. 4 chromic catgut, the placental membranes being left *in situ*. The stud manager cut out the sutures in the anus and pushed his arm up the rectum to full length. With my arm in the abdominal cavity, I located the rectum and small colon by identifying the arm in the rectum. I followed the colon forwards and about level with the third-last rib, could detect a telescoped effect of the bowel, and could insert my fingers into the turned-in fold. By gentle traction, I pulled the displaced bowel forward into the abdominal cavity until the intussusception was removed.

Two chlortetracycline* "oblets" were dropped into the abdominal cavity, and the wound in the abdominal wall was closed by 2 relaxation sutures, taking in skin, muscle layers, and peritoneum, causing eversion of the different tissues involved. Double-strand "Luron" No. 2,† as sold for fishing line, was used for these sutures. This material is extremely strong, and never following its use in any abdominal operation have I had it break and lead to rupture. Using "Luron," I sutured the skin with interrupted sutures. It has been my experience that this method of suturing is ideal for good healing, does not predispose to adhesions, and allows one to close the abdominal cavity in the shortest time possible. Tetanus antitoxin, glucose saline, and 1 gramme chloramphenicol‡ were administered. The pony was allowed up on its feet, the placenta was removed manually, and two chlortetracycline "oblets" were placed in the womb.

The operation was performed in the middle of a grass field, and during this time a heavy shower of rain lashed down. When the pony was on its feet it looked remarkably well and was walked slowly to a loose-box at the farm steading about ½ mile away, where it was made comfortable with the aid of infra-red heat.

Post-operation

The pony was seen next day and appeared in good shape. Temperature was 101° F., and heart rate was 98. There had been no bowel movement and no desire to eat or drink. More glucose saline and 1 gramme of chloramphenicol was given. This was repeated next day when temperature was 102° F., and heart rate 82. The pony had eaten some cake cubes, and a few handfuls of grass and a bag of caramels were given. The next morning 1 gramme chloramphenicol and glucose saline were again administered. The bowels were functioning normally and the pony itself was back to normal.

Reports of caesarean operations in the mare are quite common, and reports of reduction of intussusception in the mare are rare; but reports of both in the same animal at the same time have escaped my notice.

* Aureomycin.

† Imperial Chemical Industries Ltd.

‡ Chloromycetin.

ANNUAL CONFERENCE OF THE A.V.T. & R.W.

The annual conference of the Association of Veterinary Teachers and Research Workers is to be held in Bristol on March 29th, 30th, and 31st, 1960. The conference will be held in Wills Hall and it is hoped that there will be accommodation for all the delegates in the hall so that it may be more or less a completely residential conference. There are some 70 papers on the programme covering many aspects of veterinary research. There will be 3 scientific conference sessions running simultaneously in different rooms.

The official Proceedings of the 1959 B.V.A. Congress are published this week and circulated with this issue of THE VETERINARY RECORD.

Current Literature

Annotation

Nutrition of the Budgerigar

(A paper delivered by A. N. Worden at the Third World Budgerigar Congress at Harrogate in August, 1959, and published in *Budgerigar Bulletin*, September, 1959, p. 45).

Attention is drawn to the lack of factual information on the nutritional habits of budgerigars in the wild. In the domestic state adult birds have rather conservative tastes, but they can be trained to take new foods. The manner in which seed husks are removed and discarded is quite characteristic, and is often overlooked by those who analyse seed mixtures, as well as those who prepare food supplements which adhere to the seed husk. It has been confirmed experimentally that the latter are completely lost.

Under the heading of "growth," the author discusses various factors which have been thought to influence the growth rate of budgerigar chicks, by far the most important being the ability of the parents to feed them. Here he quotes freely from Dr. T. G. Taylor's book, "Feeding Exhibition Budgerigars." The brooding hen budgerigar secretes from its proventriculus a fluid analagous to the crop milk of the pigeon. In the normal healthy hen this contains a considerably higher proportion of protein than the food which the hen is eating. Chicks normally hatch at 2-day intervals, and while the youngest are fed almost pure "crop-milk," the older ones receive progressively higher proportions of seed mixed with it. The first nests of the season, and the older birds in later nests, get the benefit of what protein reserves there are in the hen's tissues, while if the hen is permitted to produce and rear too many chicks in succession, later nests, and especially the younger birds in these nests, receive "crop-milk" containing little more protein than the seed diet. These do not grow at the normal rate, and in some cases develop French moult, although it is not suggested that the latter is a simple protein deficiency. The normal growth rate in this species is very rapid, an increase from 2 to 45 grammes in the first 21 days being average.

Discussing the nutritive value of the diets commonly fed, the author gives figures for protein and fat analyses of the millet and canary seeds and their mixtures, and goes on to quote work on the amino-acid content of these seeds as compared with that of budgerigar tissues. On this basis, canary seed and the 2 species of millet analysed are deficient in glycine and lysine, while the canary alone is deficient in methionine, and the millets in arginine. Of these, the most important lack in seed mixtures is of arginine and lysine. They are deficient also in carotenoids, vitamin D, and certain other vitamins, while vitamin B_{12} is completely absent.

Other dietary requirements are fresh water, grit, and cuttle bone or a similar source of calcium, while desirable additions are fresh green-food and sprouted seeds. For breeding and rearing extra protein should be given; suggested forms are bread and milk, or sponge-cake made with eggs, sugar, and flour.

Summing up, it is stated that while budgerigars can survive, and apparently thrive, for long periods on simple seed mixtures alone, the use of such diets in breeding or exhibition stock will inevitably lead to eventual deterioration and to unsatisfactory breeding results.

ABSTRACTS

Serum Penicillin Concentrations in the Bovine with Fortified Benzathine. ENGLISH, P. B. (1959). *Aust. Vet. J.* **35.** 353.

Serum penicillin concentrations were studied in 8 steers following a single intramuscular injection of a penicillin preparation containing 50 per cent. benzathine penicillin G and 25 per cent. each of the procaine and potassium salts of penicillin G. Three different dose levels were tested on each steer, an interval of 14 days being allowed to elapse between each treatment period. Serum samples were collected at intervals for a period of 5 days after injection and their penicillin content assayed.

A dose rate of 12,500 units per kg. gave a mean serum penicillin concentration of 2 μg. per ml. at $\frac{1}{2}$ hour and 0.017 μg. per ml. at 5 days; the corresponding figures for a dose rate of 25,000 units per kg. were 6.4 μg. per ml. and 0.028 μg per ml. and for a dose rate of 50,000 units per kg., 8.8 μg. per ml. and 0.056 μg. per ml. There was very little variation from animal to animal.

The author concludes that a single dose of the penicillin preparation at a rate of 25,000 units per kg. could be expected to produce a satisfactory clinical result for 5 days in the bovine animal and that a single dose of 12,500 units per kg. should be sufficient for prophylaxis. H. W.-S.

Acquired Resistance of Sheep to Listeria Monocytogenes and Pilot Studies on Vaccination. OSEBOLD, J. W.; NJOKU-OBI, A., and ABARE, JEAN M. (1959). *Amer. J. Vet. Res.* **20.** 966.

After vaccination with live virulent Listeria organisms, sheep were resistant to intracarotid challenge with the organism. Agglutinins were detected in the sera of vaccinated sheep.

Organisms which were avirulent to mice, or which had been killed, produced no antibody response and failed to protect vaccinated sheep against intracarotid challenge.

Antibiotics for the Control of Vibriosis of Ewes. FRANK, F. W.; MEINERSHAGEN, W. A.; SCRIVNER, L. H., and BAILEY, J. W. (1959). *Amer. J. Vet. Res.* **20.** 973.

In a small experiment, a daily dose *per os* of 80 mg. chlortetracycline, with or without 2 daily injections of penicillin and dihydrostreptomycin reduced the rate of abortion in ewes artificially infected with *Vibrio fetus*. Feeding *V. fetus*-infected tissues during pregnancy while the ewes were protected by antibiotics reduced the abortion rate following artificial infection during the subsequent pregnancy. G. B. S. H.

B.V.A. Annual Congress: Glasgow 1960

For the benefit of intending delegates to the Congress which is to be held in Glasgow from August 28th to September 3rd, a list of hotels is appended. The Provisional Committee wish to make it known that there is some urgency in this matter because the tourist season will open before long and heavy bookings are being received by the city hotels. As well as the accommodation tabulated below, a number of rooms are available for men only in the University hostels which, although less congenial than the hotels, are conveniently sited and have a lower tariff (bed and breakfast 20s.). Any members who wish to make reservations in hostels are asked to inform the honorary local secretary, B.V.A. Congress, University of Glasgow Veterinary School, 83 Buccleuch Street, Glasgow, C.3.

Some members, and particularly those with families, may like to take advantage of the holiday facilities on the Clyde coast although it should be noted that one day of Congress week will be occupied by a sail from Glasgow on the river and firth. Of the resorts, Helensburgh, Gourock and Wemyss Bay have most to recommend them ; they are points of embarkation for steamers and are within 40 to 60 minutes of Glasgow by train or road.

Those who intend to make Congress part of a holiday in Scotland will find useful information in the publications, Holiday Guide to Scotland (price 1s. 6d., British Railways), and Where to Stay in Scotland (price 2s. 6d., Scottish Tourist Board, 2, Rutland Place, Edinburgh, 1). It may be of interest, too, that the International Festival will be held in Edinburgh from August 21st to September 10th. An excursion to the Military Tattoo at Edinburgh Castle is being arranged during Congress week.

Further information on accommodation or other amenities in Glasgow and surrounding district may be obtained from the honorary local secretary.

GLASGOW HOTELS

Hotel and Address	Telephone	No. rooms currently available		Terms B & B from	Miles from University	
		Double	Single			
Central Area						
Central Hotel, Gordon Street (Headquarters hotel) ...	Central 9680	20	20	53/–	2	L
Allan's, 931 Sauchiehall Street, C.3	Western 4112	25	5	22/6	1½	LC
Bath Hotel, 152 Bath Street, C.2	Douglas 7416	11	22	30/–	1½	LC
Bon-Accord Hotel, 7 Park Terrace, C.3	Douglas 2481	6	3	25/–	1	LC
George Hotel, 235 Buchanan Street, C.1	Douglas 6622	16	10	35/6	2	LC
Green's Hotel, 22 Woodlands Terrace, C.3	Douglas 4976	4	0	30/–	1½	UC
Ivanhoe Hotel, 185 Buchanan Street, C.2	Douglas 7284	20	5	33/–	2	L
Kenilworth Hotel, 5 Queen Street, C.1	Central 5151	10	10	27/6	2	LC
Linden Hotel, 19/20 Woodside Terrace, C.3	Douglas 4600	30	0	22/6	1	LC
More's Hotel, India Street, C.2	Central 2641	5	2	39/6	1	LC
North British Hotel, George Square	Douglas 6711	25	20	44/–	2	L
Park Gate Hotel, 1/3 Park Gate, C.3...	Douglas 0810	16	0	25/–	1	LC
Royal Hotel, 106 Sauchiehall Street, C.2	Douglas 3416	10	0	36/–	2	LC
St. Enoch Hotel, St. Enoch Square, C.1	Central 7033	30	20	40/–	2	L
Woodlands Gate Hotel, 10/11 Lynedoch Place, C.3 ...	Douglas 6123	6	0	21/–	1	UC
Western Area						
Belhaven Hotel, 23 Belhaven Terrace	Western 7307	8	3	30/–	1	UC
Benervie House Private Hotel, 15 Buckingham Terrace, Great Western Road	Western 7143	6	2	17/6	1	UC
Botanic Gardens Hotel, 6/7 Grosvenor Terrace, W.2 ...	Western 2888	8	4	21/–	1	UC
Cleveden Gate Hotel, 14 Hyndland Road, W.2.	Western 6153	5	2	21/–	2	UC
Devonshire Hotel, 5 Devonshire Gardens, W.2	Kelvin 1308	5	5	22/6	1½	UC
Great Western Hotel, 11/12 Botanic Crescent, N.W. ...	Maryhill 1287	10	6	22/6	1	UC
Kensington Hotel, 12 Kensington Gate, W.2	Western 6466	5	5	21/–	1½	UC
Peripheral						
Boulevard Hotel, Great Western Road, Clydebank ...	Duntocher 2381	4	4	35/–	5	L
Buchanan Arms, Drymen, Stirlingshire	Drymen 310 & 270	4	0	35/–	28	L

L = Licensed. U = Unlicensed. C = Some reduction for children been specified.

NOTE.—Members are asked to mention the British Veterinary Association when making hotel reservations.

The Victoria Veterinary Benevolent Fund

A meeting of the Council of the Victoria Veterinary Benevolent Fund was held at 10 Red Lion Square, London, W.C.1, on January 28th. The following members were present :—

Mr. H. W. Dawes (President) in the chair, Mr. E. P. Barrett, Professor T. J. Bosworth, Major J. J. Dunlop, Mrs. M. Field, Mr. R. C. U. Fisher, Professor C. Formston, Mr. J. M. Ingram, Professor J. McCunn, Mr. Arnold Spicer, Miss V. Tillemont-Thomason, Captain W. Watt, Mr. E. Wilkinson, and Major W. H. Wortley. Mr. C. W. Francis, secretary, was in attendance.

Minutes

(a) The Minutes of the meeting held on October 22nd, 1959, having been published in THE VETERINARY RECORD, were taken as read and signed as correct.

(b) The Minutes of the special meeting of Council held on December 2nd, 1959, were read and signed as correct.

Apologies for absence

Apologies for absence were received from Messrs. G. F. Brown, E. Clark, Mrs. D. I. Glover, Dr. R. E. Glover, Mr. G. N. Gould, Professors H. G. Lamont, R. Lovell, and A. Messervy, Capt. T. M. Mitchell, Professor L. P. Pugh, Messrs. J. N. Ritchie, W. J. B. Robson, Professor W. L. Weipers, Captain A. Whicher, Mr. H. M. Wilson and Dr. W. R. Wooldridge.

Correspondence

The secretary having read a letter from the general secretary, National Association of Almshouses, regarding the Fund's annual subscription, payable on January 1st, 1960,

It was resolved that for the current year the subscription be £5 5s. 0d.

Investments

The treasurer reported that with the concurrence of the other members of the executive committee he arranged, on December 9th last, to loan to the metropolitan borough of Saint Pancras the sum of £300, out of the balance standing in the Donations Account for a period of 10 years @ 5½% per annum, subject to six months' notice of repayment, and that on December 29th a mortgage deed No. 2059 was received from the borough treasurer in respect of this short term maturity loan.

It was resolved that the action of the treasurer be approved.

Accountant's Report

The secretary submitted the following report which was approved, a vote of thanks being accorded to the respective donors:—

Since the previous quarterly meeting the following donations have been received:—

	£ s. d.	£ s. d.
Allcroft, Dr. Ruth		5 5 0
Amoroso, Dr. E. C.		5 0 0
Cranleigh & West Surrey Farming Club Show		2 2 0
Hewer, Spriggs & Wilson		4 4 0
Ladies Kennel Association ...		10 10 0
Lee, J. A.		10 0
London graduates, January, 1960 ...		5 0 0
In Memory of J. A. Matheson		
Midland Counties Veterinary Association		51 0 0
Mid-West Veterinary Association Dinner/Dance		41 6 5
Professor W. M. Mitchell Testimonial Fund balance		11 14 0
North of England V.M.A. Dinner/Dance		46 14 6
Reidy, M. J.		10 0 0
Richmond Championship Dog Show		7 7 0
Scottish Metropolitan Division Dance		20 0 0
Wellingborough & District Canine Society		2 2 0
Whicher, A.		1 1 0
Collecting Boxes		
Anon	6 10 6	
Baxter & Forsyth	3 0 0	
Beckett, R. L.	7 10 0	
Brancker, Miss W. M.	1 10 0	
Brotherton & Palfree	13 6	
Bruford, J. W.	11 6	
Central Veterinary Society	5 12 6	
Chambers, Franklin & Chambers	3 5 0	
Eastern Counties Veterinary Society	13 15 11	
Edwards, J. B.	1 0 6	
Gould, G. N.	2 17 6	
Hewer, Spriggs & Wilson	4 14 0	
Holmes, J. R.	6 2 6	
Hopson, C. G.	3 0 0	
Irwin, T. H. R.	1 11 6	
Lamont, A. A.	1 15 0	
Lincs. & District Division	7 18 6	
Marshall, W. S.	2 2 6	
Midland Counties V.M.A.	4 18 0	
North of England V.M.A.	6 12 0	
North Wales Division	4 3 10	
Morton, J. T.	1 10 0	
Oliver, D. F.	1 7 6	
Ottaway, C. W.	10 0	
Pasfield, J. A.	1 1 0	
Rorrison, J. M.	1 4 6	
Royal Counties Veterinary Association	8 0 0	
Russell, Miss E. E. B.	1 5 0	
Scottish Branch	4 0 0	
Scottish Metropolitan Division ...	3 3 6	
Shipley & Son	18 0	
South Eastern V.M.A.	11 5 0	
South East Midlands Division ...	6 0 0	
Southern Counties Division ...	7 0 0	
Sussex Veterinary Society	10 14 0	
V.I.O. Annual Conference ...	7 16 4	
Walsby & Brown	1 10 0	
West of Scotland Division	4 6 0	
Whicher, A.	3 9 0	
White, J. B.	1 1 0	
Wilkinson, E.	5 0 0	
Wortley, W. H., & Partners ...	11 6	
Wright, J.	8 6	
Yorkshire Division	5 5 0	
		176 10 7
		£400 6 6

Christmas Gifts

The secretary reported:—

(a) That as a result of appeals in THE VETERINARY RECORD and *The Veterinary Journal* in December, the sum of £89 4s. 0d. was received.

(b) That the executive committee, with the assistance of Mrs. D. I. Glover, treasurer of the Ladies' Guild, had agreed on the following gifts which were despatched to 37 beneficiaries on December 15th:—

11	gifts at	£10	£110
12	,, ,,	£8	96
8	,, ,,	£7	56
1	,, ,,	£6	6
5	,, ,,	£5	25
37			£293

It was resolved (i) That the action of the executive committee in sending out special gifts in December last, to 37 recipients of the Fund at a total cost of £293, as detailed in the list submitted to the meeting, be, and the same is hereby, approved.

(ii) That the letters of thanks received from the recipients be passed on to the treasurer of the Ladies' Guild in order that the members of the Ladies' Guild may know how much their good work is appreciated.

Cases

No. 152, widow, aged 79.

Resolved: That the present grant of £1 per week be continued; and that the case be referred to the executive committee to take such action as it deems necessary in the light of further information to be obtained by the secretary from the National Assistance Board.

No. 266, daughter of late member, aged 60. Attending chest clinic. Income: national insurance pension and allowance from N.A.B.

Resolved: (a) That her present grant of 10s. 6d. per week be not disturbed;

(b) That a special gift of £10 be sent to this recipient;

(c) That the offer of a member of Council to visit this case be warmly accepted.

No. 170, widow, aged 73. Suffers from arthritis. Receiving N.A.B. allowance.

Resolved: That the present grant of £1 per week be continued.

No. 295, widow, aged 45. One daughter, aged 9, at Caledonian Schools, Bushey. Applicant employed as a housekeeper.

Resolved: That the grant of £2 per week be continued and case further reviewed in 12 months' time.

No. 311, daughter of late member, aged 62. Income: national insurance pension and allowance from N.A.B.

Resolved: That the present grant of 10s. 6d. per week be continued for a further 12 months.

New cases received since the previous meeting:—

No. 313, widow, aged 69, One son and 2 daughters, aged 41, 38, and 36 respectively.

In view of the support given to this case by the Irish scrutinising committee, the executive committee reported that on November 18th, 1959, it decided to make a temporary grant of £2 per week until the next meeting of Council.

Resolved: That the action of the executive committee be confirmed, and that the grant be continued for a further 12 months, when the case be reconsidered.

No. 334, widow, aged 70. Son, M.R.C.V.S., aged 35. The secretary reported that in view of the son's very serious illness, the executive committee made an immediate special grant of £10 and also decided that an allowance of £3 10s. per week, effective as from November 1st, be given in this case. The son unfortunately died on December 28th.

Resolved: That the action of the executive committee be approved, and that on receipt of a further report as to the present circumstances of this recipient, the executive committee be empowered to take such action thereon as it considers expedient.

No. 335, widow, aged 52. Husband died on November 16th, 1959. Two sons, John, aged 22 (married), Richard, aged 16, at a public school.

In view of the applicant's present financial position, the meeting felt that appropriate enquiries should be made to ascertain whether, in the special circumstances of this case, some reduction in the younger boy's school fees might be possible. This proposition having been agreed to, a member of Council offered to visit the widow and to undertake the necessary enquiries, and submit a report.

Resolved: (a) That for the time being, a grant of £3 per week be made to the widow, to commence as from January 1st, 1960;

(b) That the applicant be asked to inform the Council immediately her financial position changes;

(c) That the member of Council's offer be gratefully accepted, and that her report be referred to the executive committee, with power to act.

Date of next meeting

It was agreed that the date of the next Council meeting be left in the hands of the executive committee.

A NOTE ON PROFESSORS

Contrary to what is believed in some circles we do not, out of purism, tinker about with correspondents' letters for publication unless amendment really is demanded; but over an expression in a letter which appears on another page this week consideration did, for the while, hover.

"A gallimaufry of professors and lecturers," says a correspondent in taking one of the universities to task. A gallimaufry, indeed! What sort of collective is this to attach to those who may, with justice, be thought of as the intellectual cream of the profession? The Shorter Oxford defines the expression thus: "a hash of odds and ends; a hodge podge; a ragout; a medley." Collectives, as everyone knows, are a singular family within the native tongue, but at least they should have an appropriateness about them. A "clutch" of eggs envisages the hot, despoiling hand of the schoolboy; a "shoal" of porpoises is almost onomatopoeic; and a "gaggle" of geese could hardly be more apt. He who first decided that a group of fox clubs was a "skulk"; and a nest of kittens a "kindle" clearly possessed the literary instinct in no mean degree; but what of professors?

"School" (as of whales) is obvious and thus to be discounted. "Quire" has been applied to angels, and "flight" to doves. Only their students know whether our professors have any resemblance to these species, and it is safe only to suggest that angels are less disputable, in this connexion, than are doves. What, then, is the proper collective for our savants? There is but one. "Pride" is the *mot juste*. It is the collective associated with lions—need more be said? Readers are invited to honour this form in our columns for the future.

News and Comment

IN PARLIAMENT

Research Institute, Pirbright (Escape of Virus)

SIR A. HURD (March 3rd) asked the Minister of Agriculture, Fisheries and Food whether he has yet received a report on the escape of virus from the Pirbright Research Station; and whether he will make a statement.

MR. HARE: Yes. An African type of virus of foot-and-mouth disease was found to be responsible for the outbreak at Worplesdon on January 18th. Since this type of virus was present at the Research Institute and there is no evidence of the introduction of the virus with imported material, it must be supposed that it escaped from the Institute despite the strict security precautions that are in force. The outbreak was stamped out, and a meticulous investigation has been undertaken by my veterinary staff and the Director of the Institute. A thorough review of the stringent disease security precautions taken at the Institute has been completed, but these inquiries have not produced precise evidence of the way in which the virus escaped from the Institute and reached the affected cattle.

Since it must be accepted that an escape took place, it is thought that infective particles which were airborne escaped through the ventilators of one of the isolation compounds and contaminated the ground in the vicinity, and that thereafter some mechanical transport of the virus took place, probably by a wild animal or bird. The ventilation arrangements for the compounds were designed to confine any escape of virus to the area within the existing vermin-proof fences which surround each unit.

On these assumptions a number of recommendations have been made which have been accepted by the Agricultural Research Council and are being implemented by the Institute. They include further study of the existing ventilation arrangements and the erection of a single perimeter fence which will surround all the isolation units and within which crops attractive to wild life and vermin will no longer be grown. Movements of people and vehicles within the grounds of the Institute are to be reduced by the provision of a car park and bicycle store near the main entrance and the termination of the occupation of two houses which are within the Institute grounds. In this way the risk of contamination of vehicles, work-people, or wild animal life will be still further reduced.

Copies of the report will be available in the Library.

HOLIDAY EXCHANGES

There are a number of opportunities for the sons and daughters of veterinary surgeons in this country to visit their colleagues on the Continent during the forthcoming holiday periods, and we should be glad to hear from members of the profession who are interested in this scheme.

France—Exchange Holidays

M. Chaigneau (aged 15) of Montaigu (Vendée) would like come to England during July and entertain his host to a sea-side holiday in France in August this year.

Mlle Denise of Blanzac (Charente) would also like to visit England on an exchange scheme.

M. Bernard Frey (aged 15) of Reims (Marne) would like to arrange an exchange holiday of 3 weeks to a month's duration during the summer.

M. Jean Lavorel (aged 17) of Annecy (Hte. Savoie) is anxious to stay in the London area. He would like to come to England from August 1st to 21st, inclusive, and to entertain his friend in rural surroundings from August 21st to September 12th.

M. James Polomski (aged 13) of Tours (Indre & Loire) hopes to come to England for the Easter holidays on the exchange system.

Mlle Taillandier (aged 16) of Bugeat (Corrèze) and Mlle Thiebaut (aged 15) of Pithiviers (Loiret) are also interested in exchange holidays.

Paying Guests

We also have several requests from French veterinary families for accommodation for their children as paying guests with veterinary families in this country. Among these are the following: M. Jean-Paul Abadie (aged 15) of Sidi Bel Abbès (Oran); Mlle Geneviève Biedermann (aged 17) of Le Montet (Allier); M. Jean-Yves Le Couls (aged 14) of Locminé (Morbihan); Mlle Martine Rigoir (aged 17), and two boys, aged 14 and 16 respectively, of Paris. Most of these requests are for the months of July and August.

Pen Friend Wanted

Mlle Grosjean (aged 12) of de St. Florentin (Yonne) would like to correspond with another girl of her own age in this country.

Fox encephalitis: M.F.H. Inquiry

We are asked by the Animal Health Trust to say that in the paragraph sent to us last week, and published under this heading, an error had been made. The condition in foxes which is being investigated at the Trust's Canine Health Centre has not yet been positively identified as fox encephalitis though it closely resembles the condition described by Green in the U.S.A., and also bears some serological affinity with canine virus hepatitis.

R.C.V.S. OBITUARY

We record with regret the death of the following member of the profession:—

JELBART, Edward Ernest, M.C., c/o Glyn, Mills & Co., Kirkland House, Whitehall, London, S.W.1. Captain late R.A.V.C. Graduated July 9th, 1914, at the Royal Veterinary College, London. Died February 29th, 1960.

PERSONAL

Mr. D. Cameron and Mr. H. M. M. Duff have been appointed Regional Veterinary Officers of the Ministry of Agriculture. Mr. Cameron will succeed Mr. John Reid at the Ministry's Animal Health Division headquarters at Tolworth, Surrey, on April

1st, 1960, and Mr. Duff will succeed Mr. A. G. Beynon as Regional Veterinary Officer for Wales and Monmouth later in the year. Mr. Duff will be stationed at Aberystwyth.

The Rev. G. A. Willis, B.V.SC., M.R.C.V.S., has accepted an invitation from the Bishop of Gloucester to become Vicar of St. Stephen's, Cheltenham. Prior to his ordination in 1953, Mr. Willis had been Lecturer in Veterinary Hygiene in the Royal Veterinary College and previously assistant to Mr. Henry Sumner of Liverpool. For the past five years he has been Rector of Brantham, Suffolk, and will be taking up his new appointment about the end of April.

Dr. S. E. Piercy is to attend the first meeting of the FAO/OIE/CCTA Expert Panel on Contagious Bovine Pleuropneumonia to be held at the C.S.I.R.O. Laboratories, Melbourne, Australia, from March 21st to 26th. Tours in areas where the disease is a problem have been arranged both before and after the Conference so that members of the Panel may acquaint themselves with the difficulties, and the measures taken by the Australian Government to confine and control contagious bovine pleuropneumonia.

Engagement

SPARK—GIBBS.—The engagement is announced between David John Spark, B.V.SC., M.R.C.V.S., of The Square, Gillingham, Dorset, and Ruth Alwyn Gibbs of Shaftesbury, Dorset.

Births

CLAYTON.—On February 28th, 1960, at Boston, Lincolnshire, to Kate, wife of Nigel Clayton, B.V.M.S., M.R.C.V.S., a daughter, Sarah.

VALLELY.—On February 18th, 1960, to Margaret, wife of Tom Vallely, M.R.C.V.S., of 18, The Paddock, Codsall, Wolverhampton, a second son, Gervase Francis.

COMING EVENTS

March

16th (Wed.). Meeting of the R.S.M. Section of Comparative Medicine at 1, Wimpole Street, London, W.1, 5 p.m.

Annual General Meeting of the Lakeland Veterinary Association at the Fleece Inn, Kendal, 6.30 p.m.

Meeting of the North Wales Division at the Department of Agricultural Chemistry, School of Agriculture, Deiniol Road, Bangor, 2 p.m.

17th (Thurs.). 76th Annual General Meeting of the Western Counties Veterinary Association at the Rougemont Hotel, Exeter, 2.30 p.m.

Meeting of the Herts. and Beds. Veterinary Society in the Red Lion Hotel, St. Albans, 7.30 p.m.

18th, 19th and 20th (Fri., Sat. and Sun.). 3rd Annual Congress of the B.S.A.V.A. at the Washington Hotel, Curzon Street, London, W.1.

20th (Sun.). Meeting of the V.V.B.F. Ladies' Guild at the B.S.A.V.A. Conference in the Westminster Hotel, 10 a.m.

23rd (Wed.). General Meeting of the Lancashire Veterinary Association in Preston, 2.30 p.m.

Spring Meeting of the Society of Women Veterinary Surgeons at The Priory, Thurgarton, 2.30 p.m.

Meeting of the Warwickshire Veterinary Club in the Regent Hotel, Leamington Spa, 8 p.m.

Meeting of the Lancashire Veterinary Association at Booths Café, Fishergate, Preston, 2.30 p.m.

Meeting of the B.V.A. Technical Development Committee at 7 Mansfield Street, London, W.1, 10.30 a.m.

29th, 30th and 31st (Tues., Wed. and Thurs). Annual Conference of the A.V.T. & R.W. in Wills Hall, Parrys Lane, Stoke Poges, Bristol.

30th (Wed.). Joint Meeting of the Lincolnshire and District Division with the Society of Practising Veterinary Surgeons at the Great Northern Hotel, High Street, Lincoln, 2 p.m.

April

1st (Fri.). Informal Dinner of the North of Ireland Veterinary Association at the Grand Central Hotel, Belfast, 7.30 p.m.

2nd (Sat.). 14th Annual Dinner of the B.R.X. Club at the Royal Veterinary College, London, N.W.1, 6 p.m.

7th (Thurs.). 12th Meeting of the British Veterinary Poultry Association at the Royal Veterinary College, Camden Town, N.W.1, 11 a.m.

9th (Sat.). Symposium of the Forensic Science Society at Guy's Hospital Medical School.

30th (Sat.). Meeting of the N.W. Region of the B.S.A.V.A. at the Queen's Hotel, Manchester, 7.30 p.m.

August 28th to September 3rd. 78th Annual Congress of the British Veterinary Association in Glasgow.

B.V.A. COMMITTEE AND COUNCIL MEETINGS IN EDINBURGH

Tuesday, April 19th
Late Evening. Finance Sub-Committee.

Wednesday, April 20th
10 a.m. Small Animals Committee.
12 noon. Home Appointments Committee.
2.15 p.m. Veterinary State Medicine Committee.
4 p.m. Parliamentary and Public Relations Committee.

Thursday, April 21st
10.30 a.m. Farm Livestock Committee.
2 p.m. General Purposes and Finance Committee.

Friday, April 22nd
10.15 a.m. Council Meeting.

ADDRESSES OF DISEASE INFECTED PREMISES

The list given below indicates, first the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Swine Fever

Cornwall. Forge Farm, Mawla, Redruth (Mar. 7).

Dorset. Tripps Farm, Purse Caundle, Sherbourne (Mar. 1); Manor Farm, West Stour, Gillingham (Mar. 4).

Essex. Five Acres Farm, Gt. Burches Road, Thundersley (Mar. 1).

Glos. Masons Cottage, Bentham Lane, Witcome (Mar. 7).

Hants. Kingswood Farm, Catherington, Portsmouth (Mar. 4).

Herts. 68, High Road, Shillington, Hitchin (Mar. 7).

Kent. Oakwood Hospital Farm, Maidstone; South Green Farm, South Green, Stockbury, Sittingbourne (Mar. 4); Poplar Farm, Water Lane, Harrietsham; Oakley House, Bromley Common, Bromley; Lashenden Farm, Biddenden, Ashford; Piggeries at 9 Picardy Manor Way, Belvedere (Mar. 7).

Lancs. Tusons Farm, Bee Lane, Penwortham, Preston (Mar. 1); Walton Hall Piggeries, Walton, Warrington (Mar. 2).

Lincs. Piggeries, Bluebell Cross Roads, Wrangle Bank, Boston; East Fen, Stickney, Boston (Mar. 2); The Bungalow, The Common, Wainfleet, Skegness (Mar. 3).

Middx. 399, Staines Road West, Ashford Common, Ashford (Mar. 7).

Norfolk. Street Farm, North Elmham, Dereham (Mar. 2); Home Farm, Watton Road, Little Melton, Norwich (Mar. 3); Manor House Farm, Burston, Diss; Spring Farm, Palgrave, Diss; Park Farm, North Elmham, Dereham (Mar. 7).

Warwicks. Magpie Lodge, Lilbourne Road, Clifton-on-Dunsmore, Rugby (Mar. 1); High Street, Eydon, Rugby (Mar. 2).

Fowl Pest

Berks. 62, Barkham Rise, Wokingham (Mar. 1); Cash Stores, Barkham Road, Wokingham; Suncrest, Barkham Rise, Wokingham (Mar. 3); Nash Grove Lane, Wokingham (Mar. 7).

Essex. 44, Hailsham Road, Harold Hill, Romford (Mar. 1); Fairmeadow, Crayshill Road, Crayshill, Billericay (Mar. 3); Homestead, Water Lane, Radwinter, Saffron Walden (Mar. 4); Lydetta, Benwick Road, Rainham; Stapleford Hall, Stapleford Abbots High House, Stapleford Abbots, Romford (Mar. 7).

Herts. Homestead Farm, Calley Lane, Barnet (Mar. 7).

Kent. The Cottage, Leigh Green, Tenterden (Mar. 1); Sweechbridge House, Hillborough, Herne Bay (Mar. 2); Holme Crest, Denstroude, Blean, Canterbury (Mar. 3); Crit Hall, Benenden, Cranbrook; Hale Farm, Chiddingstone, Edenbridge (Mar. 4).

Leics. Woodside Nurseries, Gorse Lane, Oadby (Mar. 7).

Lincs. Droven End Road, Gedney Dyke, Spalding; Myrtle Cottage, Gedney Dyke, Spalding (Mar. 1); Maypole Hill, West Street, Horncastle (Mar. 3); The Bungalow, Station Lane, Horncastle (Mar. 7).

Middx. Whitegates Nursery, Ashford Road, Laleham, Staines (Mar. 6).

Norfolk. Rookery Villa, Thuxton, Norwich; Gordean, Wretton, King's Lynn; Stairaird, Bawdeswell, Dereham; Ivy House, High Street, Foulsham, Dereham (Mar. 1); Hinkley Cottage, Chequers Street, East Ruston, Norwich; Chapel Road, Letheringsett, Holt (Mar. 2); Westbury, Reepham Road, Bawdeswell; The Street, Bawdeswell, Dereham; Church Plot, Foulsham Road, Themelthorpe, Dereham (Mar. 3); Caldicott Farm, Ormesby St. Michael, Great Yarmouth; Smallhope Farm, Briston, Melton Constable; Hillside, Woolterton Road, Itteringham, Norwich; Moor House, Reepham, Norwich; London House, Foulsham, Dereham; The Rookery, Thuxton, Norwich; Park Farm, Bawdeswell, Dereham (Mar. 4); 2, New Estate, Bawdeswell, Dereham (Mar. 6); The Smallholding, Foxley Road, Foulsham, Dereham (Mar. 7).

Suffolk. 15, High Street, Lakenheath, Brandon (Mar. 1); Roselyn, Maids Cross Hill, Lakenheath, Brandon (Mar. 2); Exhibition Farm, Wethersfield, Haverhill; Ivy House Farm, Elmswell, Bury St. Edmunds (Mar. 4).

Surrey. Bridgeham Farm, Shamley Green, Guildford (Mar. 3).

Sussex. Little Meads, Battle; Great Stonehurst Farm, Broad Oak, Heathfield (Mar. 1); Cowden Hall, Horam (Mar. 2); Cowden Hall Farm Cottage, Horam; Beards Farm, Chiddingley, Lewes (Mar. 3).

Yorks. Larchfield, Saxton, Tadcaster (Mar. 7).

Letters to the Editor

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

GENERAL

Feeding of Mink

Sir,—I thought I should put on paper some observations I have made during the last few months on mink. Should you feel that they may be of interest to your readers perhaps you would care to publish them.

Over a period of several months a mink farmer client reported illness in 7 mink, all of which had the same symptoms of inappetence, listlessness, and blood in the mouth. Of these I attended 4, 2 of which died and 2 responded to treatment. Initial clinical examination failed to reveal anything except a necrotic tongue and blood in the mouth. Death resulted, and carcases forwarded to a laboratory for *post-mortem* examination failed to reveal any significant pathogen.

On taking the advice of a friend I examined further cases more carefully and discovered slivers of poultry offal measuring approximately $1\frac{1}{2}'' \times \frac{1}{8}''$ wound round the base of the tongue. Despite suspecting this, the slivers were very difficult to discern being easily mistaken for a necrotic slough from the tongue or frenum linguae. After removal of these coils the mink made remarkable recoveries.

Incidentally, the poultry offal is put through the mincer 4 times before being fed.

Yours faithfully,
J. D. WILDGOOSE.

70A, Queen Street,
Horsham.
March 2nd, 1960.

"Assistant Fatigue"

Sir,—Mr. J. Lawson has diagnosed the condition of "Assistant Fatigue" and the secondary condition of "Principal Fatigue." I suffered from the former for many years, my symptoms being 2 or 3 bad headaches a week, short temper, inability to concentrate, and most important of all strained relations with my wife due to my impatience with the children and selfishness in my own hobbies.

I could have answered Mr. Lawson as to the cause of the condition in one sentence: "Money is the root of all evil." My own requirements in life are an adequate income, in my case with a large family to

offset tax about £2,000 per annum net, 1 day a week or 2 consecutive days a fortnight free, 2 evenings a week free to pursue my hobbies and to allow my wife to pursue her hobbies, and 3 to 4 weeks' holiday spread over the year. Are we inferior to the medical and dental professions? Do they have to scrimp and save after being qualified 7 years? In my opinion a veterinary surgeon does not learn to be a competent diagnostician and surgeon under 5 to 7 years' experience. So, until he has reached that stage he must be prepared to work harder and have less leisure to attain fuller knowledge of life, practice, and his profession, and to prepare for full acceptance of the load of responsibility. When he has attained this status there should be ample partnerships or practice nuclei at a *reasonable* price for him to enjoy his life and have sufficient money to keep his wife and family in comfort as do members, for example, of the medical profession.

One cannot keep up a high level of accurate diagnosis and skilful surgery unless the principal/assistant relations are good. My treatment of this condition would be not to have more lay assistants but to have better paid professional assistants. One rarely goes to a farm to do minor surgery or any other task for that matter but that the farmer says "while you are here just look at so and so."

I have only had 3 bad headaches since December 25th, 1959, and if Mr. Lawson or any other reader wishes to know my remedy I shall be only too glad to advise him.

Yours faithfully,
E. E. HERROD-TAYLOR.

1, Church Cottage,
Middleton Cheney,
Banbury,
Oxon.
March 2nd, 1960.

Whither Veterinary Surgeons?

Sir,—May I, as a humble veterinary student sheltering under the gentle wings of college and as yet not fully aware of the rigours and hardships of practice, be permitted to comment on Mr. Lawson's letter?

Disturbing accounts of an increasing "do-it-yourself" attitude among the farming community, aided in some cases by certain drug firms, have appeared in your columns in recent weeks. Surely now is the time for the profession, being as it is challenged over its own bread and butter, to guard with the utmost jealousy its skills and privileges.

I would like to draw Mr. Lawson's attention to the fact that in the veterinary schools of Britain, there are large numbers of prospective veterinary surgeons who also find solace from their trials and tribulations in the Appointments Vacant columns of THE VETERINARY RECORD. I am sure they all hope that the advertisements will continue to be for veterinary surgeons and not for "veterinary auxiliaries."

Would it not be far more valuable to the profession as a whole, if the over-worked practitioner would delegate "tedious and time-consuming" minor procedures to the final- or penultimate-year student seeing practice? Such students, armed with a sound pre-clinical training together with a knowledge of elementary surgery, would surely be better equipped to carry out such procedures than lay assistants with a few weeks' training? Furthermore it would provide useful experience for students in simple techniques which they get little chance of practising at college.

I am, of course, aware that student help is not available all the year round and perhaps least of all when it would be most valuably utilised. My suggestion would, like Mr. Lawson's, necessitate a change in the present legislation.

Mr. Lawson will no doubt make a sudden recovery from "practice fatigue" and will have all the time in the world to watch "Wagon Train" when he finds himself displaced from practice by one of his less costly auxiliaries. But will he have a television set then?

Yours faithfully,
PETER G. G. JACKSON.

Royal (Dick) School of Veterinary Studies,
Edinburgh, 9.
February 29th, 1960.

Equine Castration

Sir,—In this practice we are called upon annually to castrate colts, 90 per cent. of which are Thoroughbred × Welsh pony mares. These mares are virtually unhandled and roam free on the marshland. Mares and foals are rounded up in September and an average of 40 colts are emasculated. At one time these colts were left until they were 1 to 2 years old and, owing to their wild existence, the operation presented a serious problem both to owners and to veterinary surgeons. In 1951, Formston (*Vet. Rec.* **63**, 18), in a plea for early castration in all species, described a method of foal castration which over the past 9 years has, for us, simplified this once hazardous and none-too-welcome event. During this period nearly 350 colts have been castrated at an age of 5 months or younger.

The method we have used is as follows: Mares and foals are rounded up and each colt is caught with a long neck rope. A canvas anaesthetic mask is applied and 2 to 4 drams of chloroform are administered on cotton wool. When the colt can no longer stand, a hind leg is pulled forward to expose the operation site and with the foal in lateral recumbency it is castrated using an emasculator or a No. 2 catgut transfixing ligature. Using this method, it is possible to average 6 colts an hour which is essential if one is to operate on 40 in one round up. In 9 years, there have been approximately 6 deaths —1 was weakly and risk was accepted by the owner before operation; 1 fell in a dyke and was drowned subsequent to castration; 2 from unknown causes, possibly anaesthetic overdose, and 2 from haemorrhage, due to extremely heavy red worm infestation.

The advantages of castration in foalhood claimed by the owners is that there is no subsequent terror of handling as had been experienced when done as 2-year-olds, and that much less lay assistance is required. From our point of view, the operation is simpler, quicker, and there is little or no risk to

man and patient. We think we also meet fewer rig colts at this age than at 2 years.

Irrespective of whether castration has been carried out by the emasculator or by ligation, no post-operative case of hernia has been brought to our notice. The owners say that castration at this early age has little or no effect on development and conformation. If there is any effect it is a slight fining of general points. Another interesting feature is that although this is a high tetanus risk area and owners will not have colts vaccinated, not one colt, as far as is known, has been lost from tetanus.

Yours faithfully,
D. G. LEWIS.

99, High Street,
Rochester,
Kent.
March 3rd, 1960.

Use of Prednisolone in Swine Agalactia

Sir,—In their article on the use of prednisolone in swine agalactia, Noble, Marshall, and Oakley (1960) refer to the suggestion by Cross (1957) that purified oxytocic extract given by slow intravenous injection would be a more rational method of producing milk ejection in sows than the usual subcutaneous pituitrin. Straub and Gutte (1959) have described the use of synthetic oxytocin in the sow. In the past 2 years I have used or attempted to use purified oxytocin* on a number of sows and gilts.

If the sow is restrained by the upper jaw as is usual for intravenous injections the response has appeared to be poor, possibly because adrenaline, which is known to block the milk ejecting action of oxytocin (Braude & Mitchell, cited by Folley, 1955) is released by fright. Even if this is not so, injection under restraint is likely to be of little use because the effect seems to last a maximum time of only 5 to 10 minutes and it is often impossible to calm the sow and get her into the suckling position in this time. For these reasons, only injection without any restraint is of much use, and in my experience head shaking as soon as the vein is penetrated makes this impossible except in the occasional very quiet sow, or in those cases where the sow is too ill to care due to some variation of the febrile agalactia syndrome.

In the management of this latter type of case it is obviously desirable to get maximum milk from the udder as soon as possible so that the largest number of pigs will be alive if and when antibiotic treatment makes the sow well enough to be able to resume normal, regular let-downs. It seems likely also that early withdrawal of milk from the udder will tend to retard hardening.

The following procedure appears to be the most satisfactory. The sow must first be induced to lie on her side by rubbing the teats. Unfortunately some sows resolutely refuse to respond to this stimulation and continue to lie on their teats in which event it is not worthwhile using the intravenous method. When the sow is down the piglets are assembled near the teats and the ear vein is raised with a rubber band which is cut when the vein is penetrated. A dose of 10 oxytocic units is injected in amounts of about 2 I.U. every half minute, keeping the needle and syringe in position all the time. If the injection is going to be successful milk will be available within about 30 seconds.

It is probably unwise to make general statements about the treatment of febrile agalactia, a term which covers several aetiologically different but clinically ill-defined conditions. However, my experience has been that the proportion of cases of this type in which a useful quantity of milk is let down is greater when using intravenous oxytocin than when using subcutaneous pituitrin—which is frequently unsuccessful. The finding of Straub and Gutte, that synthetic oxytocin was ineffective when given intramuscularly in mastitis is in general agreement. The amount of milk made available at the individual teat seems to depend, as might be expected, on the extent to which hardening has taken place in the udder section concerned, little or no milk ever being obtained from those which feel "rock-hard" as opposed to being merely tense. I think that the contention of Marr (1957), that pyrexia is more frequently associated with failure in milk secretion than with failure in milk ejection, is incorrect when applied to the early stages of the illness in at least some varieties of febrile agalactia.

It is more difficult to assess the effect of this technique on litter survival as this is dependent also on the efficiency of the accompanying antibiotic treatment. My impression at present is that while antibiotics alone are satisfactory in cases seen very early, loss of the entire litter is likely in sows with very hard udders. There is also a type of case in which a let-down produced by intravenous oxytocin can be of definite value if the case is only moderately advanced when first seen.

After using prednisolone in a small number of cases (9) I am still uncertain of its effect. It has not produced noticeable softening of the udder in sows where the ailment was at all advanced, and although early cases have responded adequately apparently similar ones have recovered equally well on antibiotic treatment alone.

Yours faithfully,
J. GREENWOOD.

New Street,
Mawdesley,
Lancs.
March 1st, 1960.

References

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CROSS, B. A. (1957). *Vet. Rec.* **69**. 1,222.
MARR, A. (1957). *Ibid.* **69**. 1,225.
NOBLE, W. A., MARSHALL, A. A., & OAKLEY, G. (1960). *Ibid.* **72**. 60.
STRAUB, O. C., & GUTTE, J. O. (1959). *J.A.V.M.A.* **135**. 171.

Applications for Public Appointments

Sir,—In your advertisement columns recently there was an appeal for a gallimaufrey of professors and lecturers for a certain University. Applicants were

* Pitocin (Parke-Davis), 10 I.U. per ml.
P.O.P. (Armour), 20 I.U. per ml.

to send "150 copies of application." I am assuming two things: that you would not publish a puerile attempt at a practical joke, and that this is not a misprint.

The following facts occur to me:—

Since it is inconceivable that the selection committee for these posts consists of 147 persons (allowing triplicate copies for the chairman, and a copy for the file), it would appear that it is to the students of the Faculty that these replicates must be distributed. Applicants should be aware, if this be true, that the posts may easily be filled on a basis of popularity rather than erudition.

The university in question will undoubtedly be limiting its selection to one of the following:—

(i) The Unimaginative Plodder, who carefully pens all the copies and in doing so neglects his proper work.

(ii) The Flashy and Moneyed Type who puts in his application to the A to Z typing agency with a cheque and orders for postage to the university. Such a man might be out of place in the academic atmosphere of a seat of higher learning.

(iii) The Slave Driver who forces his wife and family to copy out his application. Will such a person be suitable for gently moulding the tender philosophy of a new generation of "vets"?

(iv) The Disloyal Servant who even now is having his letters of application secretly typed and duplicated in the Typing Pool of Messrs. - - - - - - - - - & Co., by whom he is presently employed.

Finally, Sir, may I express surprise that any person should apply for a post in a seemingly duplicator-less university, and also that the Faculty would accept anyone so devoid of independence as to follow slavishly such an arbitrary ukase.

Perhaps I am wrong; perhaps the university is looking for an applicant with the guts to send in one letter and tell them to have it copied if they wish, or otherwise. . . .

Yours faithfully,
BRENDAN HALPIN.

Private Mail Bag No. 28,
Kaduna,
Northern Region,
Nigeria.
February 20th, 1960.

Egg-adapted Anti-distemper Vaccination*

Sir,—Whilst I agree with the bulk of Mr. Swann's letter (*Vet. Rec.* **72**: 191) regarding egg-adapted virus vaccination, my experience proves that we are provided with a first-rate immunising agent against distemper in greyhounds.

It is up to the manufacturers to continue to send us material with the longest possible available life, and our duty in the profession to store and care for the vaccine meticulously. My results continue to be quite staggering. Between June 1st, 1954, and February 29th, 1960, I have vaccinated or caused to be vaccinated 2,985 Greyhounds, as follows:—

Puppies	1,092
Revaccinated saplings	1,163
Adults	730
Total	2,985

There has not been one case known to me of failure to immunise. Wherever possible I give a second dose to the saplings when they come in from walks at 15 months, all having been first vaccinated at about 9 weeks. In addition, new-entry adults are vaccinated if there is no evidence of earlier vaccination, or if I deem it wise.

Lest it be thought that I am living in a fool's paradise, I have to report that distemper was introduced into the kennels at Northaw by 2 infected dogs in November, 1959. These were "Tudor Rose" and "Rock Fergus," both from the same source. By the time it was evident that they were harbouring the disease, they had been in contact with racing dogs in 3 different kennels, and promptly spread the infection to others. These were "Silver Pine," "Haddenham Jack," "Haddenham Anna," "Joy's Champion," and "Neatic." All of these dogs went down with the disease. All had been in known contact, except "Neatic," and none had been vaccinated except "Joy's Champion," who was supposed to have been done in Eire. I could not account for "Neatic's" illness, but she had been in the kennels 53 weeks, and was one of the few which had slipped through the vaccination "net," due to a lapse on the trainer's part. The 2 original infectors died. Cerebrospinal fluid taken from "Tudor Rose" during life killed the ferrets into which it was injected (Wellcome Research Laboratories). Both ferrets had typical distemper and hardening of the foot-pads. "Tudor Rose," on the other hand, had nervous symptoms but no hardening of the pads. The outbreak died out with these cases. I have every reason to be highly satisfied, but I take very great care with my vaccine. I find I have usually 10 weeks' available life in the batches I get. If possible I have it sent by train to avoid it lying in heated offices. It is kept at −5° C. all the time, and when taken out on long-distance car runs in hot weather it is carried in wide-mouth vacuum flasks in ice, as described by Mr. Swann.

A record is kept of every dog injected, and the vaccine batch number noted. All the material has come from one manufacturer only (Messrs. Burroughs Wellcome). Vaccine which has passed the expiry date is always discarded. I have never taken hard pad to be a separate entity, and it will be understood that the above remarks refer to that aspect of distemper also.

Yours faithfully,
JAS. K. BATEMAN.

10, Brackendale,
Winchmore Hill,
London, N.21.
March 7th, 1960.

* Epivax.

CORRECTION

Mr. Bateman has asked us to state that in his letter last week (p. 193) 3 pints of milk should have read 8 pints.

Field Trials of Calcium Lactate in Laying Rations

Sir,—The report by Worden and Reid (*Vet. Rec.* **71.** 179) on the addition of calcium lactate to laying rations dealt with a single trial with a relatively small number of hens. Although the technique and treatment appear to be entirely sound, application of the results to commercial egg production was bound to raise a number of queries.

A number of feeding-stuffs manufacturers and egg producers were, therefore, invited to carry out independent trials of the effect of calcium lactate on egg production. Since the object was to obtain a fair assessment by potential users under conditions which they themselves would regard as convincing, rather than to accumulate scientific data, there was no attempt to lay down any experimental pattern. Each participant conducted his trial in his own way, using the rations he was accustomed to use. The participants were, however, asked to carry out the trial for at least 2 months, since there was reason to believe that results might be negative for the first month of addition of calcium lactate. In every trial addition was at the rate of 1 per cent. of calcium lactate pentahydrate on total food, either as calcium lactate B.P. or calcium lactate livestock grade.

Twenty-eight trials were originally arranged; one was abandoned, and one was excluded because of the presence of milk solids in the basic ration (lactose can act as a lactate precursor); 4 participants did not supply adequate information, and in 2 cases there was reason to suspect the conduct of the trial. The remaining 20 trials comprised 11 in batteries in the U.K., and 9 on deep litter in the U.K., Denmark, and Mauritius. The number of birds in a trial ranged from 35 to 6,000, and the period of trial from 10 to 30 weeks.

The results can be summarised as follows:—

Seven trials showed both an increase in egg production (up to 18 per cent.) and a decrease in food consumption (up to 12 per cent.).

Four trials showed only an increase in egg production (up to 12 per cent.).

Five trials showed only a decrease in food consumption (up to 20 per cent.).

Four trials showed no effect.

No trial showed any adverse effect.

The response in some cases was immediate and in others was delayed for up to 5 weeks; in 2 trials with immediate response withdrawal gave immediate reversion to control performance levels, but unfortunately no withdrawal tests were carried out in trials with delayed response. In 2 trials there was no response until after both control and experimental birds had received a fortnight's high-level antibiotic treatment. Four participants commented on the superior health and condition of the experimental birds.

It is clear that calcium lactate has a favourable effect in a substantial majority of cases on the efficiency of food conversion. The apparent capriciousness of the effect as between increased egg production and decreased food consumption is explicable, on the hypothesis that calcium lactate acts by modifying the intestinal microflora so as to reduce proteolytic activity, in terms of a balance struck between palatability and nutritional value of the diet and the laying status of the hen. A bird laying at the top of its physiological potential cannot lay more eggs, but it can eat less food. A bird whose egg production is limited by the availability of protein can respond by producing more eggs from the same amount of food. Birds which show no response to calcium lactate will thus be either in prime condition on a first-class diet or in such a poor intestinal condition that lactate cannot exert an effective influence.

Yours faithfully,

M. H. M. ARNOLD.

Bow-Calac Limited,
Moss Bank,
Widnes.
March 7th, 1960.

Mr. Colin Parsons

Sir,—Living in Australia, THE VETERINARY RECORD takes 2 months to reach me. It was with profound regret that I read to-day of the recent death of Colin Parsons of Launceston, Cornwall.

My first assistantship was under Colin Parsons, and I am sure that my colleagues, and indeed all with whom he came in contact, will agree that in his passing the veterinary profession has lost not only a keen student and master but a fine gentleman.

Yours faithfully,

C. L. E. HAMBROOK.

Elder House,
Currie Street,
Adelaide,
Australia.
March 3rd, 1960.

SCIENTIFIC

***Nematodirus helvetianus* in British Sheep**

Sir,—Three species of Nematodirus, namely *N. battus*, *N. filicollis*, and *N. spathiger* have been recorded from British sheep. A fourth species, *N. helvetianus*, was recently recovered from the small intestine of a lamb which had died from suspected parasitic gastro-enteritis, and had been sent from a farm on the Isle of Wight to Weybridge for *post-mortem* examination.

Nine other species of gastro-intestinal nematodes also were recovered. They were *Ostertagia circumcincta*, *O. trifurcata*, and *Trichostrongylus axei* from the abomasum, and *T. colubriformis*, *T. vitrinus*, *Cooperia oncophora*, *C. mcmasteri*, *C. punctata*, and *N. filicollis* from the small intestine.

T. axei and *C. oncophora* made up the bulk of the estimated total of 108,000 worms, of which approximately 2,500 were *N. helvetianus*.

This nematode is known to occur in British cattle. It was recorded for the first time in this country by Morgan and Soulsby (1956) who recovered specimens from cattle suffering from parasitic gastro-enteritis, on farms in the south-east of England. It has also been observed at Weybridge on a number of occasions

during the last 2 years in cattle from farms in the south-east of England. So far as is known, however, this is the first record of *N. helvetianus* in British sheep.

Yours faithfully,
J. H. ROSE.

Ministry of Agriculture, Fisheries and Food,
Central Veterinary Laboratory,
Weybridge.
March 4th, 1960.

Reference

MORGAN, D. O., & SOULSBY, E. J. L. (1956). *Vet. Rec.* **68.** 1,029.

Contagious Conjunctivo-Keratitis (C.C.K.) of Sheep—Treatment with Ethidium Bromide

Sir,—Contagious conjunctivo-keratitis was first recorded in South Africa (Coles, 1931a) and has since been recognised in Britain, the U.S.A., Australasia, and many other parts of the world.

Under present sheep farming conditions in this country the definite indications for treatment are when any members of the flock show blindness, when the outbreak occurs at lambing or tupping time, shortly before show or sale and, in fact, whenever the severity of the condition merits attention.

In Australia, Beveridge (1942) found that "few sheep show any benefit even from repeated applications of zinc sulphate solution, although it often rids the eye of rickettsiae." Hawley (1954) reported on the successful use of oxytetracycline eye pellets. Riley and Barner (1953) and Sinclair (1955) suggested that treatment with chloramphenicol was of value. However, Thomas, cited by Larsen (1958), "found complete resistance to all the broad-spectrum antibiotics in 'pink-eye' of sheep."

Recent work has shown that an aqueous solution of chlortetracycline was effective, whereas eyes treated with aqueous chloramphenicol healed at the same rate as untreated controls (Dickinson & Cooper, 1959). These results were confirmed using corresponding ointments.

When investigating the rôle of "lumpy bodies" seen in smears of sheep conjunctivae, Dickinson and Cooper (1959) found that an 0.5 per cent. aqueous solution of ethidium bromide (2:7-diamino-9-phenyl-10-ethylphenanthridinium bromide) cleared these bodies from the limited number of eyes tested. This solution and a corresponding ointment were then used against C.C.K. infections in sheep. As the virus has not yet been isolated it was not possible to test the drug in the laboratory first, but in any case it is difficult to find any test which would resemble conditions in the eye. Phenanthridines, although known to possess anti-viral activity (Dickinson *et al.*, 1953), would not be found active in tests in eggs or mice against the larger viruses, because they are relatively toxic to these hosts. The eye, however, withstands high concentrations and in these trials ethidium bromide and chlortetracycline were compared in 3 farm outbreaks and 1 experimentally infected group, using the method of assessment of Dickinson and Cooper (1959). Results showed that ethidium and chlortetracycline gave similar results, *i.e.* a marked response within 48 hours.

Treatment	Number of eyes	Better	Same	Worse
Untreated controls	20	7	9	4
Chlortetracycline	20	20	0	0
Ethidium bromide	26	25	1 (severely damaged stage IV)	0

The activity has been further confirmed in 7 severe flock outbreaks involving 91 ethidium-treated eyes.

The progressiveness of corneal keratitis of cattle associated with *Moraxella bovis* infection (so-called New Forest Disease) is halted by treatment with 0.5 per cent. ethidium bromide eye ointment. The results obtained in 7 herds during last summer were equal to those after treatment with chlortetracycline, oxytetracycline, chloramphenicol, or penicillin ointments.

More work upon both conditions is being carried out and will be published later.

We wish to acknowledge the help and ready co-operation of practising veterinary surgeons concerned with field outbreaks.

Yours faithfully,
B. S. COOPER,
LOIS DICKINSON.

Research Department,
Boots Pure Drug Co. Ltd.,
Nottingham.
March 4th, 1960.

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DISEASES OF ANIMALS ACT, 1950—GREAT BRITAIN
Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period		Anthrax	Atrophic Rhinitis	Foot-and-Mouth	Fowl Pest	Sheep Scab	Swine Fever
16th to 31st Jan., 1960		5	—	1	214	—	26
Corresponding period in	1959	4	—	—	47	—	29
	1958	8	—	28	45	—	58
	1957	17	—	1	67	—	40
1st to 31st January, 1960		22	—	5	449	—	94
Corresponding period in	1959	12	—	—	80	—	84
	1958	15	—	43	120	—	106
	1957	32	—	10	125	—	70